

What is claimed is:

1. A computer program product, tangibly embodied on a computer-readable medium, for evaluating a library of materials, the program comprising instructions operable to cause a programmable processor to perform operations comprising:

receiving a plurality of images of a library of materials, the library including an array of members associated with locations in the library;

receiving user input identifying a plurality of regions of interest, each of the plurality of regions of interest including a plurality of pixels in the images and corresponding to a location in the library;

determining a series of reduced data values for one or more of the regions of interest, the series of reduced data values for a given region including reduced data values for a plurality of the images, the reduced data value for a given region in a given image being determined as a statistical function of a plurality of pixel values for the pixels in the region; and

calculating from one or more of the series of reduced data values a figure of merit for the library member at the corresponding library location.

2. The computer program product of claim 1, further comprising instructions operable to cause data processing apparatus to perform operations comprising:

defining a mask according to the user input identifying the regions of interest, the mask specifying the plurality of pixels for the regions of interest, wherein the determining includes applying the mask to the plurality of images to identify the pixels associated with the regions of interest.

3. The computer program product of claim 1, further comprising instructions operable to cause a programmable processor to perform operations comprising:

receiving user input specifying the statistical function to be used in determining the reduced data values, wherein the determining includes determining a series of reduced data values according to the specified statistical function.

4. The computer program product of claim 1, wherein the statistical function is an average function.

5. The computer program product of claim 1, wherein:  
the plurality of images includes a plurality of images captured during an experiment performed on the library of materials, the computer program product further comprising instructions operable to cause a programmable processor to perform operations comprising displaying a time-resolved profile of the experiment based on the calculated figures of merit.
6. The computer program product of claim 5, wherein the plurality of images are captured at a frequency of greater than about 1 frame per second during the experiment.
7. The computer program product of claim 5, wherein the plurality of images are captured at a frequency of greater than about 6 frames per second during the experiment.
8. The computer program product of claim 5, wherein the plurality of images are captured at a frequency of greater than about 12 frames per second during the experiment.
9. The computer program product of claim 5, wherein the plurality of images are captured at a frequency of greater than about 20 frames per second during the experiment.
10. A computer-implemented method for evaluating a library of materials, the method comprising:  
receiving a plurality of images of a library of materials, the library including an array of members associated with locations in the library;  
receiving user input identifying a plurality of regions of interest, each of the plurality of regions of interest including a plurality of pixels in the images and corresponding to a location in the library;  
determining a series of reduced data values for one or more of the regions of interest, the series of reduced data values for a given region including reduced data values for a plurality of the images, the reduced data value for a given region in a given image being determined as a statistical function of a plurality of pixel values for the pixels in the region; and

calculating from one or more of the series of reduced data values a figure of merit for the library member at the corresponding library location.

11. The method of claim 10, further comprising:

defining a mask according to the user input identifying the regions of interest, the mask specifying the plurality of pixels for the regions of interest, wherein the determining includes applying the mask to the plurality of images to identify the pixels associated with the regions of interest.

12. The method of claim 10, further comprising:

receiving user input specifying the statistical function to be used in determining the reduced data values, wherein the determining includes determining a series of reduced data values according to the specified statistical function.

13. The method of claim 10, wherein the statistical function is an average function.

14. The method of claim 10, wherein:

the plurality of images includes a plurality of images captured during an experiment performed on the library of materials, the method further comprising displaying a time-resolved profile of the experiment based on the calculated figures of merit.

15. The method of claim 14, wherein the plurality of images are captured at a frequency of greater than about 1 frame per second during the experiment.

16. The method of claim 14, wherein the plurality of images are captured at a frequency of greater than about 6 frames per second during the experiment.

17. The method of claim 14, wherein the plurality of images are captured at a frequency of greater than about 12 frames per second during the experiment.

18. The method of claim 14, wherein the plurality of images are captured at a frequency of greater than about 20 frames per second during the experiment.

19. The method of claim 10, wherein:

the plurality of images includes a plurality of images captured during an experiment performed on the library of materials, the method further comprising monitoring the course of the experiment based on the calculated figures of merit.